MARTIAN ATMOSPHERE.

[Note from *Scientific American*, Mar. 29, 1919, p. 311.]

On April 11, 1918, Dr. C. M. Olson observed a star pass behind the atmosphere of Mars. "Throughout the star's tangential course its color paled down gradually from brilliance to a very faint salmon tint; at the same time, its disk enhanced in size and softened down to a blurred woolly image, as though overmagnified, or as a small object would appear out of focus."

NOTE ON ÅNGSTRÖM'S PAPER CONCERNING RADIATION AND TEMPERATURE OF SNOW AND THE CONVECTION OF AIR AT ITS SURFACE.[1]

In the May–June, 1919, issue of *Meteorologische Zeitschrift*, pp. 153 to 155, A. Defant has discussed this very interesting paper, which is the result of investigations in Abisko in 1916. It is found that with a clear sky and a temperature difference of 5° C. between the surface and the air above it, the mean temperature of a layer 10 meters thick will be lowered at the rate of ½° C. per minute; further, it is shown that in 24 hours the mean temperature of a layer of air 500 meters thick can be lowered 14° C. This emphasizes strongly the great power of snow in cooling the air, not only in polar regions, but also in the temperate zones.—*C. L. M.*

[1] Anders Ångström: On the radiation and temperature of snow and the convection of air at its surface. Arkiv of Matematik, Astronomi och Fysik, vol. 13, No. 21.

THE "WARMTH OF DAWN".[1]

By O. MEISSNER.

[Reprinted from *Science Abstracts*, Sect. A, Dec. 31, 1918, § 1223.]

From hourly readings of temperature as recorded at the Potsdam Observatory, the conclusion is reached that the difference in point of time between temperature minimum and sunrise has a definite seasonal variation both for clear nights only, and on the average of all nights. From May to September the time of minimum temperature occurs 30 minutes after sunrise; in spring and autumn the interval is reduced to 15 minutes, but in winter minimum temperature occurs 10 minutes earlier than sunrise. Thus there is nothing in the observations to support the "warmth of dawn" theory. —*R. C[orless]*.

[1] Phys. Zeits., Sept. 1, 1918, 19: 387-388.

PROPAGATION OF HEAT IN THE LOWER LAYERS OF THE ATMOSPHERE.[1]

By H. PERROTIN.

[Reprinted from *Science Abstracts*, Sect. A, Aug. 31, 1918, § 827.]

This is a computation of the quantity (called by G. I. Taylor the "eddy conductivity") which, applied as coefficient of conductivity for the conduction of heat upward from the ground to the upper layers, will produce at those layers the observed values of temperature. An example is worked out for the pair of stations in Paris—Parc St. Maur (at ground level) and the summit of the Eiffel Tower. The eddy conductivity in summer is about 10^6 times the ordinary coefficient of still air as determined in the laboratory.—*R. C.*

[1] Comptes Rendus, May 6, 1918, 166:742-744.

TEMPERATURE MEASUREMENTS ABOUT A WINDBREAK.

By W. SCHMIDT.

[Abstracted from *Meteorologische Zeitschrift*, Sept.–Oct., 1918, pp. 256-257.]

The author has made an interesting study in the exposure of thermometers, and the subsequent effect upon the reading of thermometers on the windward and lee sides of buildings. He used 11 Assmann ventilated thermometers, distributing them on the four sides of the building of the Zentralanstalt für Meteorologie in Vienna. He gives two examples in which there were sudden rises of temperature of 6.4° C. and 4.7° C. on the windward side, whereas those thermometers in the most sheltered and protected positions showed corresponding rises of only 5.5° C. and 4° C., respectively. Other thermometers, variously exposed about the building so as to benefit by eddies, gave readings more nearly in accord with those on the windward side. This effect is one which should be taken into consideration in the exposure of thermometers, especially in view of the customary north-wall exposure of those thermometer shelters which are fastened to windows, whereas warm winds are usually from the south.—*C. L. M.*

CLIMATE OF PALESTINE.

By ELLSWORTH HUNTINGTON.

[Abstracted from "The Future of Palestine," in Geog. Rev., Jan., 1919, vol. 7, p. 31.]

Combined with the scarcity of soil in Palestine, is the great lack of adequate rainfall in summer. Practically all the rain of the year falls between October and May. This means that, wherever possible, irrigation must be practised, as in the Jordan valley, or such crops must be raised as winter wheat, barley, and olives. In the Jordan valley, the warmer half of the year has a mean noon temperature 100° F., and the winter half, 75° F. It can be seen at once that such high temperature results in a general loss of energy. The places where the health is the best are those where the soil is the thinnest and least suited to agriculture. Dry years are another feature of Palestine climate, which hinders agricultural undertakings. In 1909, the author saw thousands of acres of wheat and barley into which sheep and camels had been turned for grazing because there was no crop to reap. Even the drought-resistant olive tree sometimes fails. There are, however, thousands of acres of land which are unplanted and which, if planted with trees would be greatly improved, because they would serve to prevent the too rapid drainage of the water in the soil.—*C. L. M.*

VARIATIONS IN CLIMATE OF ANCIENT PALESTINE.

In a note in the Quarterly Journal of the Royal Meteorological Society,[1] J. W. Gregory comments upon the lack of definite information upon which to base opinions concerning climatic variations in ancient Palestine. It has been said, for example, that the eleventh century B. C. was well watered; but it is here pointed out that that century included David's famine. Similarly, it has been said that the thirteenth century B. C. was dry; but there are the dews on Gideon's fleece and the song of Deborah and Barak to testify as to its wetness. There are also the records of Ruth's famine in the fourteenth century B. C., Elijah's in the tenth, and Elisha's in the ninth, so that there appears to be little ground for definite conclusions regarding periodic variations of climate in ancient Palestine.—*C. L. M.*

[1] Jan., 1919, 45:21.